



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/720,598	05/07/2001	Gerald Bocquenet	022701-915	2355

21839 7590 09/24/2003

BURNS DOANE SWECKER & MATHIS L L P
POST OFFICE BOX 1404
ALEXANDRIA, VA 22313-1404

EXAMINER

SACKEY, EBENEZER O

ART UNIT

PAPER NUMBER

1626

DATE MAILED: 09/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/720,598	Applicant(s) BOCQUENET ET AL.	
	Examiner EBENEZER SACKEY	Art Unit 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 22-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 22-24, 28, 29 and 31-33 is/are rejected.
- 7) ☒ Claim(s) 25-27 and 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 22-33 are pending.

This is a response to applicant's amendment filed on 06/30/03. Applicants have amended claims 22-33 for clarification purposes. Claim 22 has been amended to recite the phrase "providing water in vapor phase to an evaporator, and vaporizing the aminonitrile by feeding the aminonitrile in liquid phase to the evaporator," as well as the phrase "wherein the aminonitrile in liquid phase is contacted with the water vapor in the evaporator, and subsequently introducing the resulting mixture of aminonitrile and water vapor into hydrolysis reactor in which the resulting mixture is contacted with the catalyst". Additionally, claim 28 has been amended to overcome the 112-second paragraph, rejection set forth in the last office action by deleting the expression "preferably and more preferably". Receipt of the translated Foreign Priority Document filed on 06/30/03 is acknowledged.

The rejection of claims 22-33 based on WO 98/37063 has been withdrawn because applicants have provided an English translation of the Priority Document, which predates WO 98/37063.

Claim Rejections - 35 U.S.C. § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made

to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 22-24, 28-29 and 31-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (U.S. Patent No. 3,658,810) or WO A-96/22974 for the reasons set forth in the last office action dated 12/26/02. Applicant's arguments filed 06/30/03 have been fully considered but they are not deemed persuasive. Applicants argue that the applied references do not disclose features of the instant claims namely, the process providing water in vapor phase to an evaporator, and vaporizing the aminonitrile by feeding the aminonitrile in liquid phase to the evaporator, wherein the aminonitrile in liquid phase is contacted with the water vapor in the evaporator, and subsequently introducing the resulting mixture of aminonitrile and water vapor into a hydrolysis reactor in which the resulting mixture is contacted with the catalyst. This argument is unpersuasive because the question is, is the claimed features or modifications of the instant process obvious over the disclosure of the references. The disclosures render the instant process obvious because sequential versus simultaneous reaction per se is not patentable when identical reactions occur. Tanaka et al. '810' relates to a process for producing caprolactam by contacting aminocaproic acid, aminocaproamide or a mixture of the two with steam in the presence of a catalyst, thus, it embraces the instant process because steam is the mist of water vapor. See the entire publication, especially column 1, lines 14-21. Nothing unobvious is seen between the instant process and that of '810' or '974'. The only difference is that in '810' and '974', the reactants and the catalyst contact each other simultaneously in the reaction zone, whereas the instant process requires the water vapor and aminonitrile to be in contact in an evaporator and subsequently introducing the resulting mixture into a hydrolysis reactor wherein the resulting mixture is contacted with the catalyst. No showing of unexpected results and/or improved yield has been forthcoming. The advantages between the simultaneous contact of aminocaproic acid,

aminocaproamide or a mixture of the two with steam in the presence of a catalyst in the reaction zone and the instant process wherein water vapor and aminonitrile are in contact in an evaporator before contacting the catalyst in the reaction zone must be established by factual evidence. Additionally, WO '974' discloses on page 5, lines 26-30 that a pre-evaporation of the reactants can be carried out, which reactants then move into a mixing chamber. Applicants further argue that there is no disclosure or suggestion of feeding the aminonitrile in liquid phase to be in contact with water vapor before contacting the resulting mixture with the catalyst. Even though, this feature is not disclosed, '810' discloses that "the intended ring closure reaction of the starting material progresses." See column 4, lines 42-51.

Applicants next argue that by comparison WO 96/22974, herein referred to as '974' relates to preparing lactam by means of a vapor phase reaction between an aliphatic aminonitrile and water in the presence of a solid catalyst which fail to disclose or suggest vaporizing an aminonitrile by feeding the aminonitrile in liquid phase to be in contact with water vapor, before contacting the resulting mixture with a catalyst, as recited in instant claim 22. Again, no showing of an unexpected result or improved yield and/or results has been forth coming to distinguish between the instant process and the process of '974'. Additionally, applicants have not excluded the use of solid catalyst from the instant process. Thus, a solid catalyst or any form of catalyst would suffice.

Claims 23, 24, 28, 29, 31, 32 and 33 relates to temperature and pressure range of employed in the instant process. These ranges are well within the purview of the skilled artisan and are also disclosed by the references. See for example '974', page 5, lines 31-33 for the temperature and pressure range. Claims 25 and 26 relate to the aminonitrile being fed as a film or in atomized form. The references are silent on this

limitation. Claim 33 relates to dwell time of aminonitrile in the vaporizing stage. This limitation is also not disclosed in '974'. However, this limitation is a manipulation of process parameters to improve product and/or yield. The instantly claimed process would therefore have been suggested to one of ordinary skill.

Claims 25, 26, 27 and 30 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to E. Sackey whose telephone number is (703) 305-6889. The examiner can normally be reached on Monday-Friday from 7:30 am to 4:30 pm.

Application/Control Number: 09/720,598
Art Unit: 1626

Page 7

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane, can be reached on (703) 308-4537. The fax phone number for this Group is (703) 308-4556.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-1235.

EOS
September 22, 2003

Joseph K. McKane
Supervisory Patent Examiner
Art Unit 1626, Group 1600
Technology Center 1

Alan L. Rotman
ALAN L. ROTMAN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600

Application/Control Number: 09/720,598
Art Unit: 1626

Page 8